

Remark

Applicants respectfully request reconsideration of this application as amended. No claims have been amended. Claims 1-18 and 24-48 have been cancelled. Claims 49-81 are new. Therefore, claims 19-23, 49-81 are present for examination.

Election

Applicants respectfully elect Group II, Claim 19-23, without traverse. Claims 1-18 and 24-48 are canceled without prejudice.

35 U.S.C. §102 Rejection

Penn

The Examiner has rejected claims 19-23 under 35 U.S.C. §102 (e) as being anticipated by Penn, U.S. Patent No. 6,685,141 (“Penn”). The Examiner suggests that Penn shows a secondary payload mounted to the exterior of a launch vehicle. However, a closer read reveals that Penn suggests only mounting external fuel tanks or strap-on boosters (tank and engine) and not a secondary payload.

A payload has been defined in many different ways. However, by any accepted definition it does not include external tanks or strap-on boosters. Accordingly the claims of Group II are believed to be allowable. New claims 49-74 are all dependent on Claim 19. New Claim 75 is a method claim modeled on Claim 19 and is believed to raise no new issues of patentability. New Claims 76-81 depend from new Claim 75.

Some definitions of payload follow. The list is not intended to be exhaustive and some definitions relevant only to other fields (e.g. data transport in computer science) have been deleted.

Merriam-Webster's Online Dictionary

<http://www.britannica.com/dictionary?book=Dictionary&va=payload&query=payload> (28 July 2004)

Main Entry: **payload**

Pronunciation: 'pA-''lOd

Function: *noun*

Date: circa 1922

1 : the load carried by a vehicle exclusive of what is necessary for its operation; *especially* : the load carried by an aircraft or spacecraft consisting of things (as passengers or instruments) necessary to the purpose of the flight

2 : the weight of a payload

American Heritage® Dictionary of the English Language, Fourth Edition

<http://dictionary.reference.com/search?q=payload&r=67> (28 July 2004)

1. The revenue-producing part of a cargo.

- a. The total weight of passengers and cargo that an aircraft carries or can carry.
- b. The total weight of the instruments, crew, and life-support systems that a spacecraft carries or can carry.
- c. The passengers, crew, instruments, or equipment carried by an aircraft, spacecraft, or rocket.

2. The explosive charge carried in the warhead of a missile.

MSN Encarta

<http://encarta.msn.com/encnet/features/dictionary/DictionaryResults.aspx?refid=1861724347> (28 July 2004)

1. **freight quantity of cargo:** the quantity of cargo or load that a plane, train, or other vehicle can carry, often expressed as weight or volume

2. **air plane passengers and equipment:** the passengers and instruments carried by an aircraft or spacecraft

3. **arms explosive charge:** the explosive charge of a rocket or missile or the total explosive charge of the bomb load carried by an aircraft

Infoplease

<http://www.infoplease.com/dictionary/payload> (28 July 2004)

1. the part of a cargo producing revenue or income, usually expressed in weight.

2. the number of paying passengers, as on an airplane.

3. Aerospace, Mil.

a. the bomb load, warhead, cargo, or passengers of an aircraft, a rocket, missile, etc., for delivery at a target or destination.

- b. the total complement of equipment carried by a spacecraft for the performance of a particular mission in space.
- c. the explosive energy of the warhead of a missile or of the bomb load of an aircraft: a payload of 50 megatons.

Cambridge Advanced Learners Dictionary

<http://dictionary.cambridge.org/define.asp?key=58228&dict=CALD> (28 July 2004)

The amount of goods or people which a vehicle, such as an aircraft, can carry, or the explosive which a missile carries, or the equipment carried in a spacecraft

Wikipedia, the free encyclopedia

<http://en.wikipedia.org/wiki/Payload> (28 July 2004)

In cargo transport, *payload* is the valuable contents of the vehicle.

Similarly, in military aircraft, payload is the carrying capacity of an aircraft, whether as cargo, munitions, or external fuel, although internal fuel is usually not included.

Delta II Payload Planners Guide, The Boeing Company, 2000

[This document apparently considers the word “payload” to be sufficiently well understood within its target audience that nowhere in this 323-page document is it defined. The following excerpts give examples of its usage.]

“The Delta team addresses each customer’s specific concerns and requirements, employing a meticulous, systematic, user-specific process that addresses advance mission planning and analysis of payload design; coordination of systems interface between payloads and Delta II; processing of all necessary documentation, including government requirements; prelaunch systems integration and checkout; launch-site operations dedicated exclusively to the user’s schedule and needs; and postflight analysis.”

“The Delta team works closely with its customers to define optimum performance for mission payload(s).”

“The vehicle was capable of delivering a payload of 54 kg (120 lb) to geosynchronous transfer orbit (GTO) and 181 kg (400 lb) to low-Earth orbit (LEO).”

“The payload attach fitting (PAF) provides the interface between the second stage and the space-craft for two-stage missions.”

“The third-stage payload attach fitting mates the third stage with the spacecraft...”

DOD Dictionary of Military and Associated Terms

<http://www.dtic.mil/doctrine/jel/doddict/data/p/03974.html> (28 July 2004)

(DOD, NATO)

1. The sum of the weight of passengers and cargo that an aircraft can carry. See also load.
2. The warhead, its container, and activating devices in a military missile.
3. The satellite or research vehicle of a space probe or research missile.
4. The load (expressed in tons of cargo or equipment, gallons of liquid, or number of passengers) which the vehicle is designed to transport under specified conditions of operation, in addition to its unladen weight.

“Space Mission Analysis and Design”, 3rd Edition, James R. Wertz & Wiley J. Larson (ed.), Kluwar 1999.

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“The *payload* consists of the hardware and software that sense or interact with the subject. Typically, we trade off and combine several sensors and experiments to form the payload, which largely determines the mission’s cost, complexity and effectiveness. The subsystems of the *spacecraft bus* support the payload by providing attitude maintenance, power, command, telemetry and data handling, structure and rigidity, and temperature control. The payload and spacecraft bus together are called the *spacecraft, space segment, or launch vehicle payload*.

“The *launch system* includes the launch facility, launch vehicle and any upper stage required to place the spacecraft in orbit, as well as interfaces, payload fairing, and associated ground-support equipment and facilities. The selected launch system constrains the size, shape, and mass of the spacecraft.”

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“As illustrated in Fig. 1-3 in Chap. 1, the *payload* is the combination of hardware and software on the spacecraft that interacts with the subject (the portion of the outside world that the spacecraft is looking at or interacting with) to accomplish the mission objectives. Payloads are typically unique to each mission and are the fundamental reason that the spacecraft is flown.”

Conclusion

Applicants respectfully submit that the rejections have been overcome by the amendment and remark, and that the claims as amended are now in condition for allowance. Accordingly, Applicants respectfully request the rejections be withdrawn and the claims as amended be allowed.

Invitation for a Telephone Interview

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

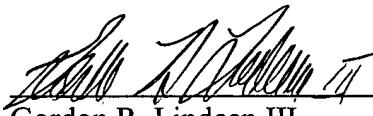
Request for an Extension of Time

Applicants respectfully petition for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension. Charge our Deposit Account.

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: 9/7/14



Gordon R. Lindeen III
Reg. No. 33,192

12400 Wilshire Boulevard
7th Floor
Los Angeles, California 90025-1026
(303) 740-1980